Fact Sheet | What are HABs?

California Freshwater & Estuarine Harmful Algal Blooms (HABs)

What are Cyanobacteria and harmful algal blooms?

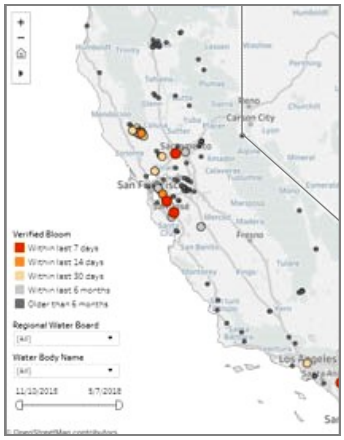
Cyanobacteria (also known as blue-green algae) and algae occur in freshwater and estuarine waterbodies. Algae and cyanobacteria have been around for billions of years and are natural components of ecosystems. They perform many roles that are vital to our aquatic communities, by being a food source and producing oxygen. However, when certain conditions are favorable for these organisms, algae and cyanobacteria can rapidly grow causing "blooms." Algae and cyanobacteria can produce harmful compounds, such as toxins and taste and odor compounds, that cause health risks to humans and animals. When blooms pose a risk to humans, animals, and the environment, they are referred to as harmful algal blooms (HABs).

How do I know if there is a HAB in the water?

Sometimes the bloom is easily visible, forming a "scum" or discoloration on the water surface. Other times, it is less visible, floating beneath the surface or on the bottom of a water body (benthic). Blooms can appear green, blue, yellow, red, or brown. Cyanotoxins, produced by cyanobacteria, cannot be visually detected in water or tissues. Several guidance documents are available to aid identification of algae and cyanobacteria (Fact Sheet [1] & Visual Guide[2]), and the California Freshwater HAB Field Guide[3] is available to assist in monitoring.

Where and when are HABs occurring in California?

Voluntarily reported HABs are posted on the HAB Reports Map[4]. In recent years, HABs have been increasing in incidence, duration, and toxicity statewide, and as a result, human, domestic animal (dogs and livestock, in particular), and wildlife health impacts are on the rise. In 2017, almost 200 HABs were reported in drinking water and recreational water bodies; a two-fold increase from 2016. In some areas, the duration of HABs are increasing from predominantly summer blooms to year-round blooms in some areas.



What causes HABs?

Increased inputs of nutrients like nitrogen and phosphorus (from fertilizers and human or animal wastes), promote cyanobacterial growth

1— https://mywaterquality.ca.gov/habs/what/visualguide_fs.pdf
2— https://drive.google.com/file/d/0B40pxPC5g-D0R2QtUVZhYzNIaXc/view
3— https://mywaterquality.ca.gov/habs/resources/field.html
4— https://mywaterquality.ca.gov/habs/where/freshwater_events.html

and can lead to increased occurrences of HABs. Low flows, stagnant water, increased intensity and duration of sunlight, and sustained high temperatures create the ideal conditions for HABs. Current research suggests that the rising temperatures and changing precipitation patterns caused by climate change are a catalyst for their growth.

What are the possible health concerns of HABs?

Cyanotoxins and algal toxins pose risks to the health and safety of people and pets, drinking water, and recreating in water bodies affected by blooms. They can also accumulate in fish and shellfish to levels posing threats to people and wildlife. Symptoms of HAB-related illness[5] in people and animals are available from the Centers for Disease Control and Prevention (CDC), and by contacting the California Poison Control Center (1-800-222-1222). Of the reported HAB-related incidents in 2017, there were 25 domestic animal deaths, numerous fish and wildlife, and 8 human incidents of illness.

Can animals be affected?

Pets, especially dogs, are susceptible to HABs because they swallow more water while swimming and playing in the water. They are also less deterred by green, smelly water that may contain HABs. Animals can experience symptoms within minutes of exposure to the toxins. These symptoms include vomiting, diarrhea, weakness, difficulty breathing, and seizures. In the worst cases, animals have died. If your pet experiences these symptoms after exposure, contact your veterinarian immediately. A veterinarian fact sheet[6] and an outreach letter to veterinarians[7] are available. For additional info refer to the Domestic Animals web page[8].

What guidelines does California use for HABs?

Currently, there are no federal or state regulatory standards for cyanotoxins in recreational waters or drinking water. Participating state agencies have developed suggested guidelines for addressing health concerns for cyanotoxins in recreational waters[9]. The Department of Public Health, county health departments, and water body managers are encouraged to use this guidance for posting water bodies when HABs pose a health threat. Guidance is also available for addressing cyanotoxins in drinking water[10].

What can I do?

- Report any suspected HAB or potential HAB-related illness[11]
- Practice Healthy Water Habits at your local lake, river, or stream![12]
- Help reduce nutrients in in your local lake, rivers, and streams by modifying some daily activities[13]

For info on marine HABs Please refer to the Cal HAB Monitoring and Alert Program (CalHABMAP)[14]

5 — https://www.cdc.gov/habs/illness-symptoms-freshwater.html
6 — https://oehha.ca.gov/risk-assessment/fact-sheet/blue-green-algae-veterinarian-reference
7 — https://oehha.ca.gov/risk-assessment/document/veterinarian-outreach-letter-interagency-working-group-harmful-algal-bloom
8 — https://mywaterquality.ca.gov/habs/resources/domestic_animals.html
9 — https://mywaterquality.ca.gov/habs/resources/habs_response.html
10— https://mywaterquality.ca.gov/habs/resources/index.html#drinking
11— https://mywaterquality.ca.gov/habs/do/bloomreport.html
12— https://mywaterquality.ca.gov/habs/do/
13— https://www.epa.gov/nutrientpollution/what-you-can-do
14— http://www.habmap.info/